

Claims

1. The method of measuring of spectroscopic properties of loose products that comprises periodic delivery of the measured sample to the measurement zone using a loading device, registration of the spectroscopic properties of the sample in standstill and further removal of the sample from the measurement zone, wherein the sample is delivered to the measurement zone in portions, not less than two portions being used to fill the measurement zone, the said portions of equal volume are alternately put in the different parts of the horizontal section of the measurement zone providing uniform filling and constant bulk density of the product within the measurement zone and wherein a provision is made for readjustment of the optical path length of the measurement zone and for adjustment of the spectroscopic properties depending on the optical properties of the analysed product during the registration.
2. The method of claim 1, wherein the said length of the optical path of the measurement zone is set depending on the value of optical absorption of the measured sample in the measured spectral range, ensuring that the value of the optical density of the analysed sample would be in the range for the highest precision of the measurement.
3. The device for measurement of the spectroscopic properties of the loose products that comprises a loading bunker, an inlet (receiver) hole, a portioned sampling unit, a measurement zone, a measuring unit, a unit for closing the measurement zone, an outlet (discharge) hole and a sample drawer, wherein the means are introduced in the portioned sampling unit for continuous uniform product loading alternately to the different areas of the horizontal section of the measurement zone, that ensures consequent filling of not less than two portions

of equal volume, the measurement zone being equipped with the means for measurement of optical path length.

4. The device of claim 3, wherein the portioned sampling unit is made as a paddle wheel, the means of uniform consequent filling of the product alternately to the different areas of the horizontal section of the measurement zone are made as paddles alternately inclined with respect to the plane perpendicular to the wheel axis, the shape of the paddles is defined by the area of the horizontal section of the measurement zone to which the paddle loads the product.
5. The device of the claim 3, wherein the portioned sampling unit is made in a form of a conveyor belt, the means of uniform consequent filling of the product alternately to the different areas of the horizontal section of the measurement zone are made as paddles alternately inclined with respect to the direction of the belt movement, the shape of the paddles is defined by the area of the horizontal section of the measurement zone to which the paddle loads the product.
6. The device of the claim 3, wherein the means of uniform consequent filling of the product alternately to the different areas of the horizontal section of the measurement zone allow the plate to be placed between the portion sampling unit and the measurement zone parallel to the light beam direction and splitting the channel that connects the sample portion loading unit with measurement zone.
7. The device of the claim 3, wherein the means of uniform consequent filling of the product alternately to the different areas of the horizontal section of the measurement zone provide a shutter made in a form of a rotating wheel with holes that are made on the different distances from the rotation axis, the shutter and the portion sampling unit having the same drive.

8. The device of the claim 7 wherein the portion sampling unit is made in a form of a screw feeder.
9. The device of claim 3 wherein the measurement zone is equipped with the means for measurement of the optical path length depending on the spectroscopic properties and bulk density of the measured product sample.
10. The device of claim 9, wherein the means for measurement of the optical length of the measurement zone are made in a form of a moving front wall of the measuring zone, moving wall drive unit and the optical length control sensor.
11. The device of the claim 9 wherein the means for measurement of the optical length of the measurement zone are made in a form of a set of exchangeable optical cells with different optical lengths, the optical lengths closely coupled with the sample portion loader unit from the upper side and with the measurement zone classing unit from the bottom side.
12. The device of claim 3, wherein the inlet (receiver) hole and the outlet (discharge) hole are shifted aside with respect to the vertical line that goes through the rotating axis of the wheel.
13. The device of claim 3, wherein the measurement zone closing unit is made in a form of a dosing device that allows portioned discharge of the product from the measurement zone.
14. The device of claim 13, wherein said dosing device is made in a form of a paddle wheel.
15. The device of claim 13 wherein said dosing device is made in a form of a screw feeder.
16. The device of claim 13, wherein said dosing device is made in a form of a conveyor belt.